UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,945	08/21/2001	Douglas Hamilton Taylor	9-15417-5US	5238

20988	7590	11/30/2004		

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EXAMINER
MEEK, JACOB M

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/932,945	TAYLOR ET AL.
	Examiner	Art Unit	
	Jacob Meek	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *21 August 2001*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1 - 15* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1,2,4,7 - 12* is/are rejected.
7) ☒ Claim(s) *3,5,6 and 13-15* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *21 August 2001* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 1, 2, 4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tzannes et al (US Patent 6,072,779) in view of Hansen (US Patent

6,807,234).

With regard to claim 1, Tzannes teaches a method of determining a number of sub-

carriers having a signal-to-noise ratio above a predefined threshold (See column 3, lines 11 –

27 and column 6, lines 40 – 47); computing a number of useful sub-carriers by dividing by a

predefined ratio (see column 4, lines 1 – 8, where the result of this calculation would result in

a mapping of useful subcarriers); and, computing a throughput by multiplying channels by a

predefined capacity per sub-carrier (see column 3, lines 28 – 53. Tzannes is silent with

respect to modulation configurations and the construction of the modulation configurations.

Hansen teaches a method for providing modulation configurations of varying data types (see

Figure 1); and constructing a sub-set of sub-carriers by selecting sub-carriers having the

highest signal-to-noise ratio (see column 3, line 57 – column 4, line 4 where this is interpreted

as equivalent functionality). It would have been obvious to one of ordinary skill at the time of

invention to combine Tzannes' channel mapping / characterization techniques with Hansen's

multi-service support platform to provide a communication device that would support a variety

of services in manner that would allow optimization of bandwidth utilization.

With regard to claim 2, Tzannes teaches the method which calculates total capacity of the system bounded by the total number of available channels (see column 3, lines 28 –53), and this is interpreted as providing the limitation of ensuring that number of carriers does not exceed total number of carriers.

With regard to claim 4, Tzannes teaches the method which stores the margin in the form of a look-up table (see column 2, lines 41 – 53) where this margin calculation is interpreted as provided equivalent functionality and is interpreted to be the result of empirical data.

With regard to claim 7, the functions claimed as the apparatus incorporate the method of claim 1 therefore it would have been obvious considering the aforementioned rejection of method claim 1. Tzannes and Hansen also disclose a method and an apparatus.

With regard to claim 8, the functions claimed as the apparatus incorporate the method of claim 2 therefore it would have been obvious considering the aforementioned rejection of method claim 2. Tzannes and Hansen also disclose a method and apparatus.

2.   Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Chow et al (US Patent 5,479,447).

With regard to claim 9, Chow teaches a method of selecting a first sub-set of sub-carriers having a signal-to-noise ratio that exceeds a predetermined threshold (see column 9, step 3, 4, 5) where step 5 describes the method of determining the number of carriers required to pass predetermined threshold. Chow does not specifically address the specifics of the 2nd, 3rd and 4th limitations of claim 9. Chow does disclose a method for allocating additional bits in to meet target throughput (see column 10, steps 7 – 11) which is interpreted by examiner as providing equivalent functionality to that disclosed by applicant and would ensure maximum throughput by ensuring the best signal to noise ratios are maintained.

3.   Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow

in view of Hansen (US Patent 6,807,234).

With regard to claim 10, Chow is silent with respect to modulation configurations and the

construction of the modulation configurations. Hansen teaches a method for providing

modulation configurations of varying data types (see Figure 1); and constructing a sub-set of

sub-carriers by selecting sub-carriers having the highest signal-to-noise ratio (see column 3,

line 57 – column 4, line 4 where this is interpreted as equivalent functionality). It would have

been obvious to one of ordinary skill at the time of invention to combine Chow's channel

mapping / characterization techniques with Hansen's multi-service support platform to provide

a communication device that would support a variety of services in manner that would allow

optimization of bandwidth utilization.

4.   Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow

in view of Tzannes (PG Pub US2002/0009155 A1).

With regard to claim 11, Chow is silent with respect to his device being useful for PNI

applications. Tzannes discloses that his device utilizing multicarrier modulation is useful in

powerline applications (see paragraph 0005). It would have been obvious to one of ordinary

skill in the art at the time of invention to combine Chow's channel mapping / characterization

techniques with Tzanne's powerline communication system to produce a device capable of

optimizing system throughput.

5.   Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chow

in view of Tzannes ('9155) in further view of Hansen.

With regard to claim 12, Chow and Tzannes ('9155) are silent with respect to modulation

configurations and the construction of the modulation configurations. Hansen teaches a

method for providing modulation configurations of varying data types (see Figure 1); and

constructing a sub-set of sub-carriers by selecting sub-carriers having the highest signal-to-noise ratio (see column 3, line 57 – column 4, line 4 where this is interpreted as equivalent functionality). It would have been obvious to one of ordinary skill in the art at the time of invention to combine Chow's channel mapping / characterization techniques with Tzanne's powerline communication system to produce a device capable of optimizing system throughput and with Hansen's multi-service support platform to provide a communication device that would support a variety of services in manner that would allow optimization of bandwidth utilization.

Allowable Subject Matter

6.   Claims 3, 5, 6, 13 – 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Cited Prior Art

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kivanic / Liu (NPL), Williams (US Patent 5,598,435) and Hyll (US Patent 6,005,893) disclose techniques for calculation and control of channels with many similar elements to applicant.
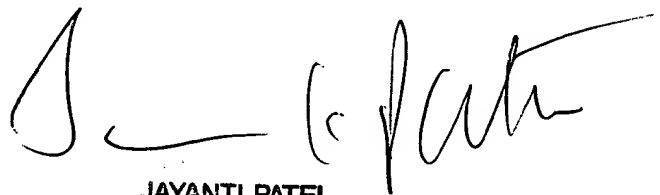
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM

JAYANTI PATEL
SUPERVISORY PATENT EXAMINER